

A composite image of space featuring Earth, the Moon, Mars, Jupiter, a comet, and a satellite. The background is a deep blue space filled with stars. In the upper left, a portion of Earth is visible, showing blue oceans and white clouds. Below it, the Moon is shown in a dark, cratered state. To the right of the Moon is the reddish-orange surface of Mars. Further right is the large, banded planet Jupiter. A bright comet with a long tail is streaking across the upper right. A small satellite is visible in the upper left, near Earth.

1st Annual NASA/JPL Small Business Symposium & Awards Ceremony

***Small Businesses Building a High
Tech Industrial Base for the Future***

***Dr. Paul Hertz
Chief Scientist
Science Mission Directorate***

November 2008





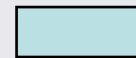
Science Mission Directorate

- SMD's Mission: Explore the Earth, Moon, Mars, and beyond; Chart the best route of discovery; and reap the benefits of Earth and space exploration for society.
- SMD's Goals: (a) Study Earth from space to advance scientific understanding and meet societal needs; (b) Understand the Sun and its effects on Earth and the solar system; (c) Advance the scientific knowledge of the origin and history of the solar system; and (d) Discover the origin, structure, evolution, and destiny of the universe.
- SMD's Priorities: (a) Answer fundamental scientific questions with innovative space missions; (b) Expand the recognized public benefits of NASA science; (c) Design and implement programs executable within the budget; (d) Promote U.S. leadership across space and Earth science; and (e) Advance science as humans explore beyond Earth orbit.



NASA Science Mission Launches (CY07-CY16)

As of 10/1/08



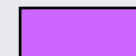
NASA Mission on US ELV



Joint NASA - International Partner Mission



DoD Mission with Substantial NASA Contribution



International Mission with Substantial NASA Contribution



Reimbursable for NOAA



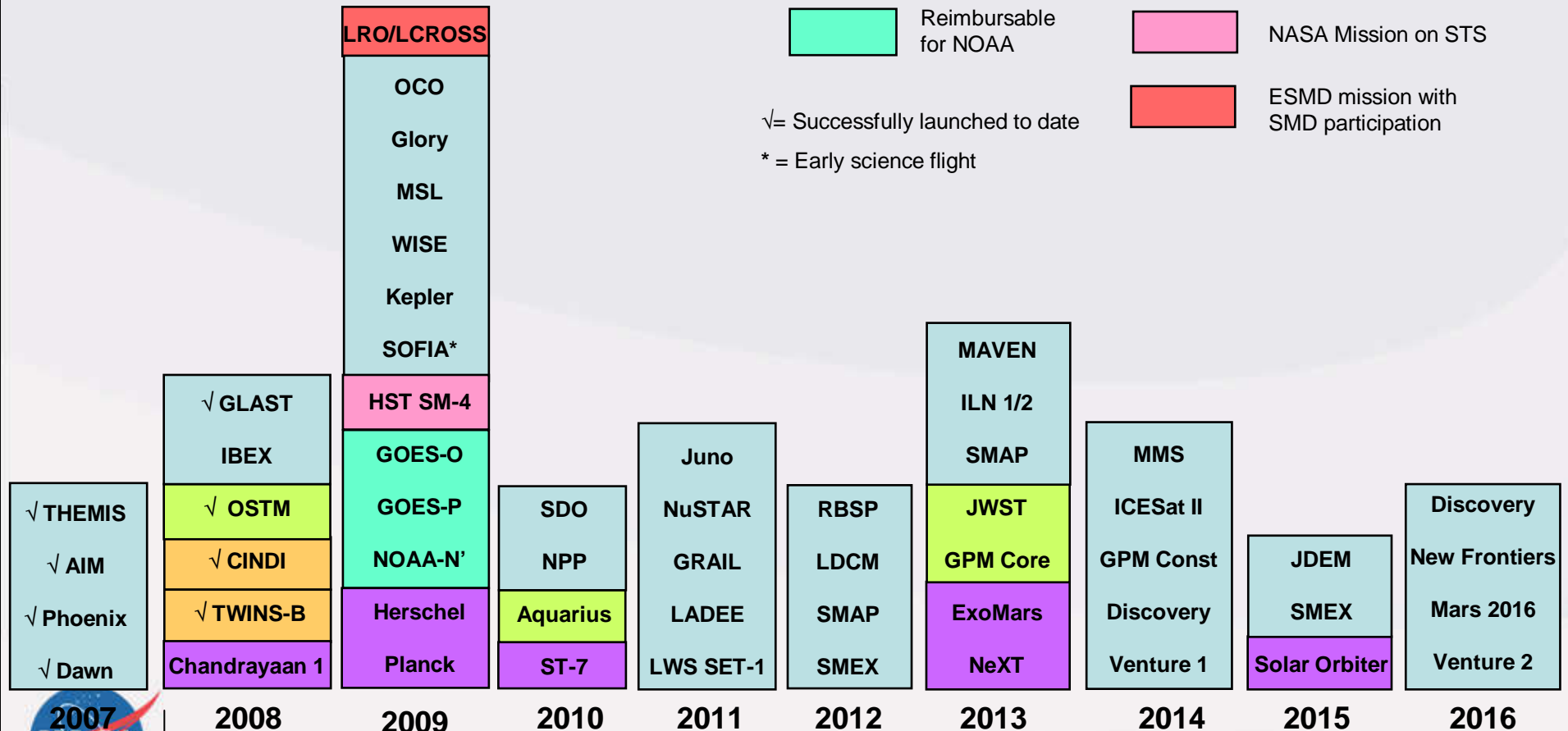
NASA Mission on STS



ESMD mission with SMD participation

√ = Successfully launched to date

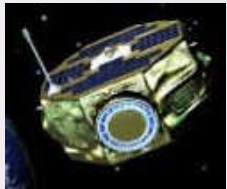
* = Early science flight



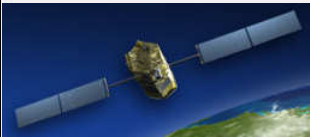
Current Missions



- **Kepler** will discover hundreds of Earth-size planets in the habitable zones of their stars.
Competed mission in the Discovery Program. JPL issued the prime contract to Ball Aerospace Technology Corporation.



- **IBEX** (Interstellar Boundary Explorer) will image the boundary of the Solar System, i.e. the shock front between the solar wind and the interstellar medium.
Competed mission in the Explorer Program. GSFC issued the prime contract to Southwest Research Institute.



- 3. **OCO** (Orbiting Carbon Observatory) will measure the sources and sinks of atmospheric carbon dioxide.
Competed mission in the Earth System Science Pathfinder (ESSP) Program. JPL issued prime contracts to Orbital Sciences Corporation and Hamilton Sundstrand.



Current Missions

- **Glory** will measure global aerosols, liquid cloud properties, and solar irradiation.



Strategic mission in the Earth Science Program. GSFC issued prime contracts to Raytheon, University of Colorado, and Orbital Sciences Corporation.

- **MSL** (Mars Science Laboratory) will determine whether Mars ever had an environment capable of supporting microbial life.



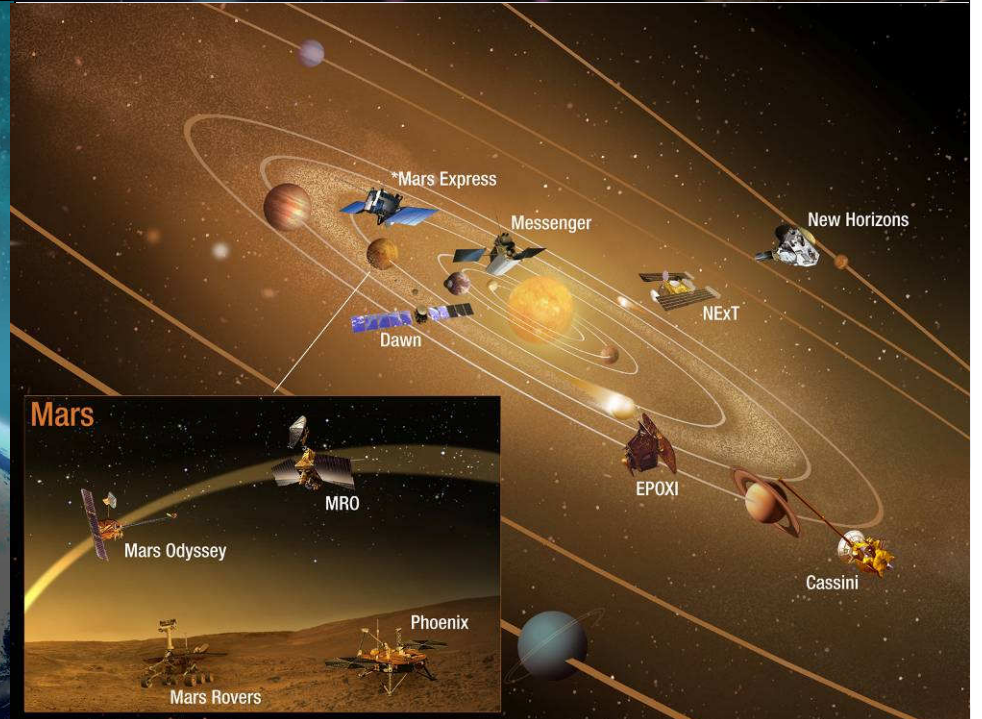
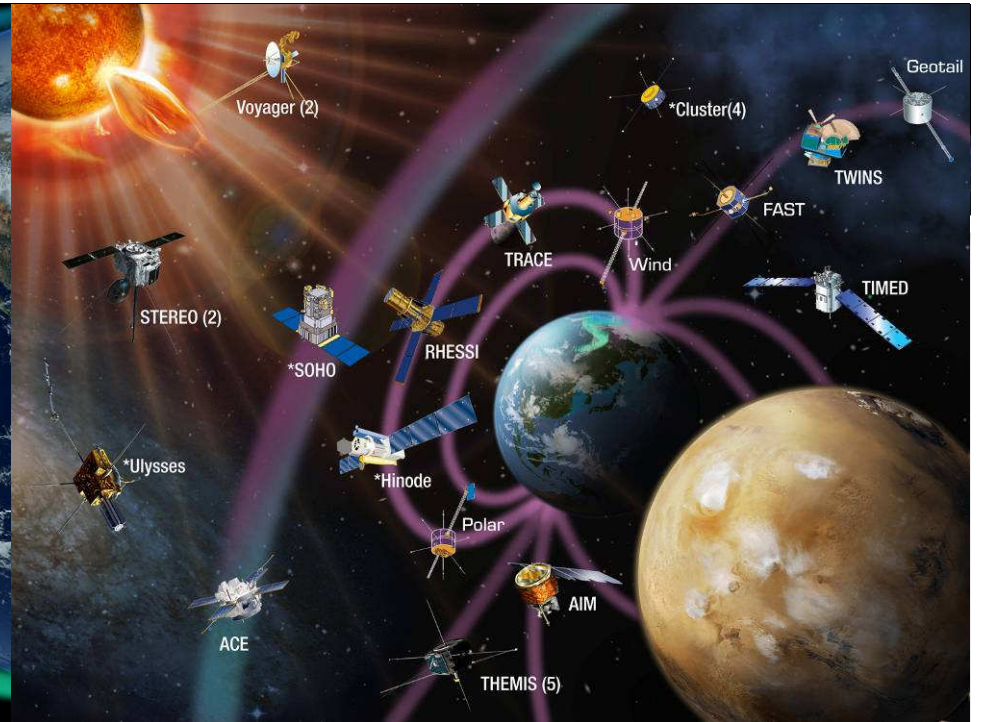
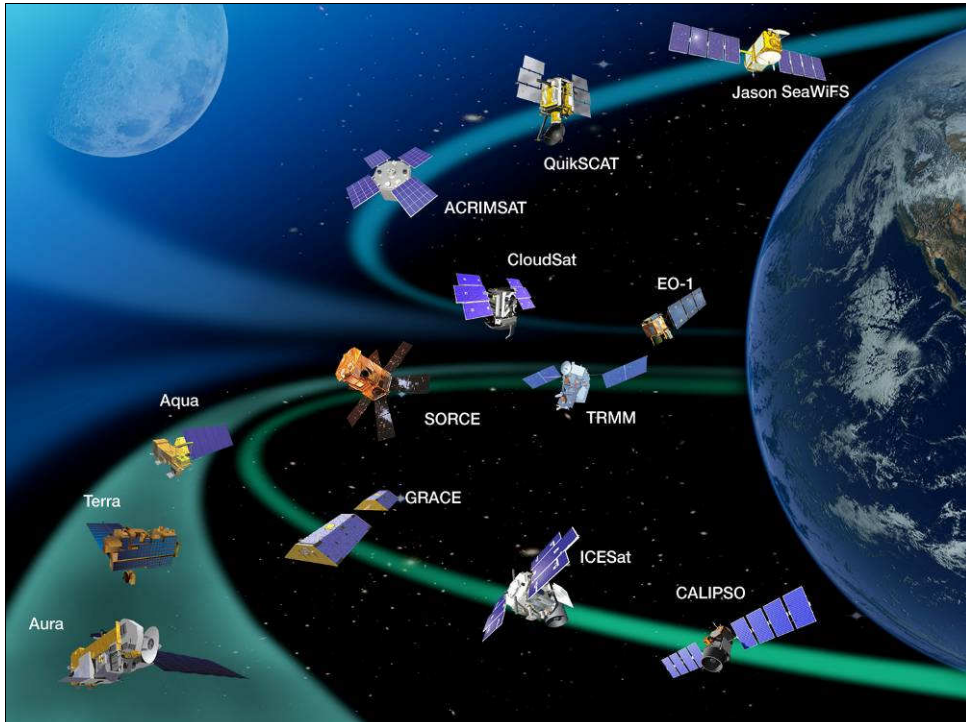
Strategic mission in the Mars Exploration Program. JPL is the system integrator and issued subcontracts to Lockheed Martin, Aeroflex Inc., and Starsys Inc.

SOFIA (Stratospheric Observatory for Infrared Astronomy) is an airborne observatory that will study the universe in the infrared spectrum.



Strategic mission in the Cosmic Origins Program. DFRC is the system integrator and issued subcontracts to Universities Space Research Association, L-3 Communications and CSC/Dyn Corporation.







Future Missions

- **SDO** (Solar Dynamics Observatory) will determine the Sun's influence on Earth and near-Earth space by observing the solar atmosphere's spatial and temporal variability in many wavelengths simultaneously.
- **Aquarius** will determine the ocean's circulation pattern by measuring global sea surface salinity.
- **Juno** will investigate Jupiter's origins, interior structure, deep atmosphere, and magnetosphere.
- **LADEE** (Lunar Atmosphere and Dust Environment Explorer) will characterize the Moon's atmosphere and lunar dust environment.
- **RBSP** (Radiation Belt Storm Probes) will discover the source, loss, and transport processes that govern the Earth's radiation belts.



Science Mission Directorate

Dr. Paul Hertz, Chief Scientist
202-358-0986 (work)
Paul.Hertz@nasa.gov
<http://nasascience.nasa.gov/>

